UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/550,857	04/17/2000	Thomas Buch-Rasmussen	NN 26	1708

26137 7590 11/19/2002

PATENT DEPARTMENT
SKADDEN, ARPS, SLATE, MEAGHER & FLOM LLP
FOUR TIMES SQUARE
NEW YORK, NY 10036

EXAMINER	
YOUNG, JOSEPHINE	
ART UNIT	**PAPER NUMBER**
1623	14

DATE MAILED: 11/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/550,857	Applicant(s) BUCH-RASMUSSEN ET AL.	
	Examiner Josephine Young	Art Unit 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 May 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14,16-35 and 39-59* is/are pending in the application.

4a) Of the above claim(s) *56-58* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14,16-35, 39-55 and 59* is/are rejected.

7)☒ Claim(s) *6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 May 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Objections/Rejections Set Forth in the Office Action dated November 6, 2001

The Drawings were objected to as being informal because only photocopies of black and white photographs were submitted.

The Specification was objected to for failing to include a Brief Description of the Drawings.

Claims 56-58 were withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claims 1-55 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 52 was rejected under 35 U.S.C. 102(b) as anticipated by International Publication No. WO 96/03978 to ROSER et al.

Claims 1-55 were rejected under 35 U.S.C. 103(a) as being unpatentable over ROSER.

Response to the Amendment filed May 3, 2002

In the amendment filed May 3, 2002, the Specification was amended to include a Brief Description of the Figures.

Claims 15 and 36-38 were cancelled. Claims 1, 6, 20, 26, 29, 35 and 40-54 were amended. Claim 59 was added.

An action on the merits of claims 1-14, 16-35, 38-55 and 59 is contained herein below.

In regards to the Objection of the Specification, Applicants' amendments filed May 3, 2002 have been fully considered and have overcome the Objection set forth in the Office Action dated November 6, 2001.

In regards to the Objection of the Drawings, Applicants' amendments filed May 3, 2002 have been fully considered but they are not persuasive. The Objection of the Drawings is maintained.

In regards to the Rejection of claims 1-55 under 35 U.S.C. 112, second paragraph, Applicants' amendments filed May 3, 2002 have been fully considered and have overcome the Objection set forth in the Office Action dated November 6, 2001 (claims amended or cancelled).

In regards to the Rejection of claim 52 under 35 U.S.C. 102(b) as anticipated by International Publication No. WO 96/03978 to ROSER et al., Applicants' amendments filed May 3, 2002 have been fully considered and have overcome the Rejection set forth in the Office Action dated November 6, 2001 (claims amended). However, said claim would have been obvious over ROSER.

In regards to the Rejection of claims 1-55 under 35 U.S.C. 103(a) as being unpatentable over ROSER, Applicants' amendments filed May 3, 2002 have been fully considered but they are not persuasive. The Rejection of the claims is maintained for the reasons of record as set forth in the Office Action dated November 6, 2001.

Response to Arguments filed May 3, 2002

Applicant's arguments filed May 3, 2002 have been fully considered but they are not persuasive.

In regards to Applicants' argument that the photographs are compliant with 37 CFR 1.84(b), it is noted that the Drawings are not in compliance due to the poor quality (half-tone) of Figures 1-4 and improper top margins for Figures 1, 2 and 4. See the enclosed NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW (FORM PTO-948). Therefore, the Objection of the Drawings is proper.

In response to Applicants' argument that ROSER does not teach or suggest either the high concentration of active substance (i.e. greater than 25%) or the lower concentration of binder (i.e. less than 75%), it is noted that while ROSER does not teach such specific concentrations, ROSER does teach on page 24, lines 29-31 that more than 20% weight percentage of organic molecules can be incorporated into the HDC delivery systems. In addition, as Applicants have admitted, ROSER also teaches that small delivery system size would increase the comfort of administration and minimize tissue damage. Therefore, it would be obvious to one of skill in the art at the time the invention was filed to use higher concentrations of organic molecules to achieve a smaller delivery system to increase the comfort of administration and minimize tissue damage. Therefore, ROSER provides proper motivation to make and use the recited invention. One of ordinary skill in the art would have a reasonable expectation of success in making and using a composition with more than 20% weight percentage of organic molecules in the compositions to maximize the amount of therapeutic to be delivered and to minimize the size of the compositions to increase the comfort of administration and reduce tissue damage.

Information Disclosure Statement

The information disclosure statement filed on December 6, 2001 does not fully comply with the requirements of 37 CFR 1.98 because: it lacks either a statement as specified in 37 CFR 1.97(e) or the fee set forth in 37 CFR 1.17(p). Failure to timely comply with this notice will result in the above mentioned information disclosure statement being placed in the application file with the noncomplying information **not** being considered. See 37 CFR 1.97(i).

Oath/Declaration

The oath or declaration is defective because: Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c).

A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

Specification

The use of the registered trademark "Maltidex H16323" has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner that might adversely affect their validity as trademarks.

Claim Objections

Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim, namely claim 3. Applicants are required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-14, 16-35, 39, 52-55 and 59 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recites the limitation "without prior dissolution or other reconstitution." However, it is noted that the specification does not provide support for such a limitation.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14, 16-35, 39-55 and 59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. The term "needle" is indefinite. Claim 1 is directed to a pharmaceutical composition shaped like a needle. Claim 9 further limits the claim to a shape of "a rod essentially cylindrical and pointed in one end." It is unclear as to if and how the shape recited in claim 9 is different from the needle of claim 1. In addition, claim 8 limits the claim to a pellet. It is unclear as to how a needle and a pellet can be referring to the same shape.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-14, 16-35, 39-55 and 59 rejected under 35 U.S.C. 103(a) as being unpatentable over ROSER, previously cited.

Applicants claim solid pharmaceutical compositions having the shape of a needle for parenteral injection comprising (a) a binder that is at least 0.5% by weight of the composition comprising at least one non-crystallization agent and at least one carbohydrate-binding agent, and (b) at least one therapeutic agent that is at least 25% by weight of the composition. In addition, Applicants claim compositions with specific physical properties, such as binders that can withstand a pressure force of at least 5 or 10 Newtons, binders that remain in as an amorphous matrix for at least 6 months at ambient temperature, binders with a glass transition temperature of at least 30°C and compositions with specific viscosities at a certain temperature range. Applicants also claim methods to make such compositions by mixing, shaping and

cooling. Finally, Applicants claim methods for injecting such compositions using an ejection device.

ROSER as set forth in the Office Action mailed November 13, 2002, is incorporated herein as set forth supra. ROSER teaches solid dose delivery system comprising an active agent and a glassy vehicle that may be a carbohydrate. Further, ROSER teaches inclusion of sugar alcohols, which are non-crystallization agents of the claims. The composition may be formulated in various shapes, including as a needle. Any of a number of therapeutic agents may be employed. See the claims. The ROSER method or preparation (see e.g. claim 43) includes mixing, shaping and drying. Pages 6-7 of ROSER suggest administration to animals, as well as human patients.

As amended, the following teachings are also added to the record since Applicants' amendment necessitated the same. On page 7, lines 9-29, ROSER teaches that it would be advantageous to provide solid drug delivery systems of defined size, shape, density and dissolution rate, to ensure a more uniform distribution. In addition, ROSER teaches that small delivery system size would also increase the comfort of the administration and minimize tissue damage. Further, ROSER teaches on page 24, lines 29-31 that more than 20% weight percentage of organic molecules can be incorporated into the HDC delivery systems.

ROSER does not specifically state that the therapeutic agent should be at least 25% of the composition. In addition, ROSER may not explicitly disclose each of the ingredients or formulation details as claimed.

It would have been obvious for a person of ordinary skill in the art at the time of the invention to increase the concentrations of the therapeutic agent. ROSER teaches that more than

20% of the organic molecules can be incorporated into the delivery system. Therefore, one of ordinary skill in the art would have been motivated and had a reasonable expectation of success in making and using a composition with more than 25% weight percentage of organic molecules in the compositions to maximize the amount of therapeutic to be delivered and to minimize the size of the compositions to increase the comfort of administration and reduce tissue damage. The formulation details are considered to have been obvious in view of the overall teaching of ROSER, for the purpose of optimizing the effectiveness of the composition and of minimizing the amount of pain and tissue damage. Therefore, one of ordinary skill in the art would have been motivated and had a reasonable expectation of success to make and use the specific compositions of the present invention.

Further, claims 1-14, 16-35, 39-55 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over ROSER, previously cited, in view of International Publication WO 94/22423 to BAR-SHALOM (N), newly cited.

As set forth supra, Applicants claim solid pharmaceutical compositions having the shape of a needle for parenteral injection comprising (a) a binder that is at least 0.5% by weight of the composition comprising at least one non-crystallization agent and at least one carbohydrate binding agent, and (b) at least one therapeutic agent that is at least 25% by weight of the composition. Applicants also claim methods to make and use such compositions.

ROSER, as set forth supra, teaches solid dose delivery system comprising an active agent and a glassy vehicle that may be a carbohydrate. Further, ROSER teaches inclusion of sugar alcohols, which are non-crystallization agents of the claims. The composition may be

formulated in various shapes, including as a needle. Any of a number of therapeutic agents may be employed. See the claims. The ROSER method or preparation (see e.g. claim 43) includes mixing, shaping and drying. Pages 6-7 of ROSER suggest administration to animals, as well as human patients. On page 7, lines 9-29, ROSER teaches that it would be advantageous to provide solid drug delivery systems of defined size, shape, density and dissolution rate, to ensure a more uniform distribution. In addition, ROSER teaches that small delivery system size would also increase the comfort of the administration and minimize tissue damage.

ROSER does not specifically state that the therapeutic agent should be at least 25% of the composition. In addition, ROSER may not explicitly disclose each of the ingredients or formulation details as claimed.

BAR-SHALOM discloses solid pharmaceutical compositions with a shape and consistency enabling it to penetrate the skin, *consisting essentially of* the active drug substance (page 6, lines 26-34). BAR-SHALOM teaches that such compositions must have the sufficient strength to enable penetration of the skin or mucosa. Therefore, various materials can be added to the compositions, including carbohydrates, such as polysaccharides, sucrose, glucose, agarose, dextrin and cyclodextrin, in crystalline or caramelized form. See page 16, line 23 to page 17, line 10.

It would have been obvious to one of skill in the art to make and use the compositions of the present invention to make and use the pharmaceutical compositions of the present invention wherein the therapeutic agent is at least 25% of the composition by weight (i.e. wherein the binder is at most 75% of the composition by weight). ROSER teaches pharmaceutical compositions comprising all of the disclosed ingredients. BAR-SHALOM teaches that such

pharmaceutical compositions require only enough binder to give sufficient strength to penetrate the skin or mucosa. The ratios of binder to therapeutic agent as well as the formulation details are considered to have been obvious over the overall teaching of ROSER in view of BAR-SHALOM, for the purpose of optimizing the effectiveness of the composition and of minimizing the amount of pain and tissue damage. Therefore, one of ordinary skill in the art would have been motivated and had a reasonable expectation of success to make and use the specific compositions of the present invention.

Conclusion

Claims 1-14, 16-35, 39-59 are pending. Claims 56-58 are withdrawn. Claim 6 is objected to. Claims 1-14, 16-35, 39-55 and 59 are rejected. No claims are allowed.

Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The present application has been transferred to Examiner Young. Therefore, any inquiry concerning this communication or earlier communications from the examiner should be directed to Josephine Young whose telephone number is (703) 605-1201. The examiner can normally be reached on Monday through Friday, 9:00 a.m. to 6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached at (703) 308-4624. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3014 for regular communications and (703) 872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

JY
November 14, 2002

JAMES O. WILSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600